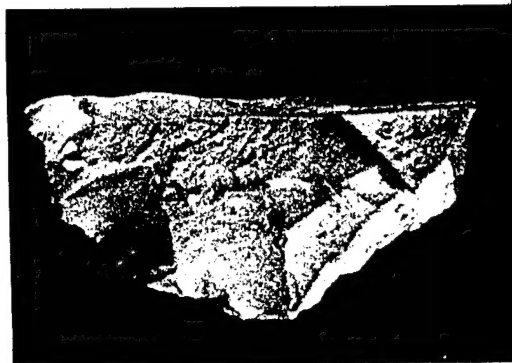
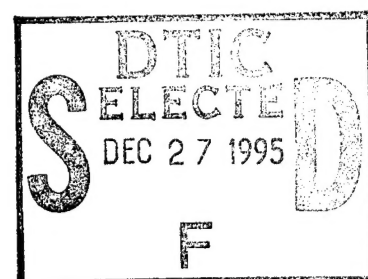
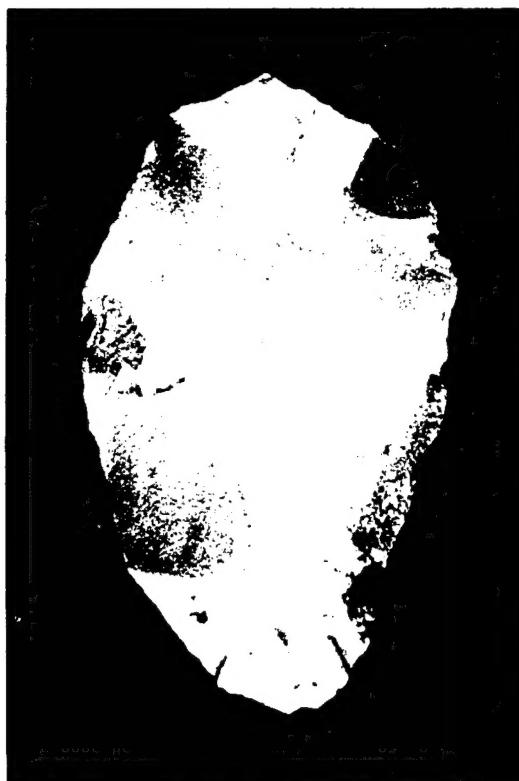




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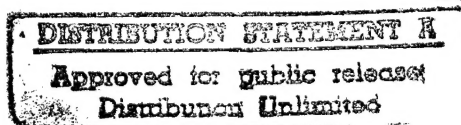
Results of Test Excavations at 32DU413, Dunn County, North Dakota

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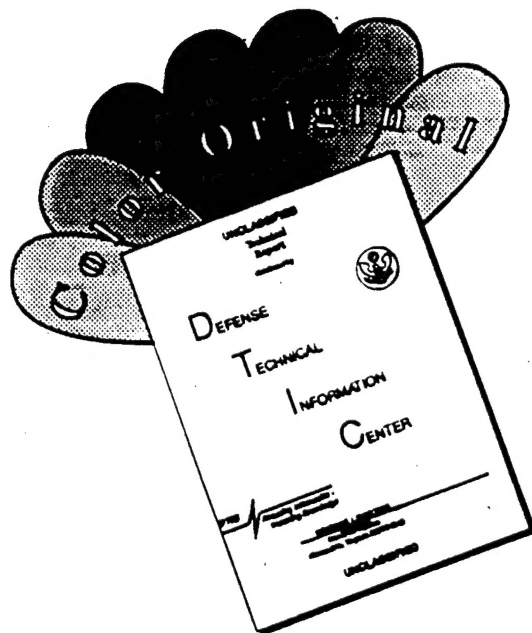


Prepared by:
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Laramie, Wyoming

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The purpose of performing a systemic inventory and testing of site 32DU413 was to gather sufficient information to assess the eligibility of the site for nomination to the National Register of Historic Places (NRHP). The inventory was conducted from April 24 to April 29, 1995, in the Little Missouri Public Use		

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area which is bordered on the north by the Little Missouri arm of Lake Sakakawea and on the west by Little Missouri Bay. The Andrus Resort area was also included because of scheduled construction activities. In general, the site does not appear to be eligible for nomination to the NRHP. This includes all of the areas within Andrus Resort that are scheduled for development. Archeological clearance for these developments is recommended without additional cultural resource stipulations.

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RESULTS OF TEST EXCAVATIONS AT 32DU413,
DUNN COUNTY, NORTH DAKOTA;
LTA PROJECT 950405b

Ross G. Hilman, Cynthia J. Oliver, Peter J. Lund and John Sharpe

July 25, 1995

INTRODUCTION

From April 24, 1995 to April 29, 1995, personnel from LTA, Inc., conducted a systematic inventory and testing of the area defined as 32DU413. This work was carried out under purchase order DACW45-95-P-0705, issued by the US Army Corps of Engineers, Omaha District. The purpose of the investigations was to gather sufficient information to assess the eligibility of 32DU413 for nomination to the National Register of Historic Places.

The work performed was intended to provide compliance with all or pertinent segments of the following Federal legislation and implementing regulations: Public Law 86-523, Reservoir Salvage Act of 1960 as amended by P.L. 93-291; Public Law 89-665, National Historic Preservation Act of 1969 as amended by P.L. 94-52; Public Law 95-341, American Indian Religious Freedom Act, Executive Order 11593; implementing regulations 36 CFR Parts 60, 63, 66, and 800.

The Corps of Engineers (1995:1) summarized the work to be accomplished as follows:

Undertake systematic investigation of the active cutbank and adjacent areas above it. Refine and map the boundaries of the site, and collect any diagnostic artifacts from the surface. Areas will be evaluated for evidence of intact deposits through a series of shovel tests at ten-meter intervals, excavation of six one-meter square units in areas of dense artifact concentration, and bank profiling where appropriate. Determine eligibility for the National Register of Historic Places. . . .

Areas of beach terrace will be evaluated to document any intact deposits in greatest jeopardy of destruction. . . .

The contractor shall prepare a report which details the work done, the study rationale, the results of the fieldwork, discussion of the vandalism and erosional impacts, recommendations for additional work, and management recommendations.

Through mutual agreement, the scope was slightly modified after the commencement of fieldwork. Because of anticipated modifications and improvements at Andrus Resort, three of the six test units were placed in areas scheduled for construction activities.

The remainder of this report provides a discussion of the location and the environment, previous work at 32DU413, methods, the results of the systematic inventory and testing program, and recommendations.

LOCATION AND ENVIRONMENT

The site area of 32DU413 is within the Little Missouri Public Use Area. The local terrain is primarily badlands topography with narrow ridges and steep-sided drainages (Figure 1a). Positioned south of the left bank of the original Missouri River channel, the site is currently bordered on the north by the Little Missouri arm of Lake Sakakawea and on the west by Little Missouri Bay. Wave action and slumping have produced cutbanks and beach surfaces that make up the northern part of the site (Figure 1b).



a



b

Figure 1. Photos of the western part of 32DU413 within Andrus Resort (a; view to the west) and the exposed beach areas and cutbanks (b; view to the east).

This part of North Dakota is within the Little Missouri River Study Area as it is defined within *The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component* (North Dakota State Historic Preservation Office 1990). Most of the site has been under lease as a camping and fishing resort since 1967. This portion of the site is currently within the Andrus Resort.

Much of this western part of the site is developed with buildings, camping areas, and boat launching facilities. The southwestern part of the site has been extensively disturbed by the construction of the main road into the resort. The eastern part of the site area is fenced off from the resort and currently used for grazing. The April 1995 survey was conducted under early spring field conditions. There was sparse ground cover, allowing for good surface visibility.

PREVIOUS WORK

Site 32DU413 was initially recorded in June of 1975, during a pedestrian survey conducted by the University of North Dakota. The survey report describes the site as "a wide scatter of lithic debris over an area approximately 1.7 by 0.3 kilometers on the south shore of the Little Missouri River embayment" (Leaf 1976). Leaf's site map shows "three different areas of Knife River flint" within the boundaries of 32DU413. The approximate locations of these early discoveries is shown on Figure 2.

In 1980, an intensive inventory of the Little Missouri Public Use Area was undertaken by the Corps of Engineers. Only four flakes of Knife River flint were found within the original boundaries of 32DU413 during this survey (Harris 1980). Harris also noted that "fist-sized chunks of brown siliceous material, possible Knife River Flint, were located along the beach within the limits of the site 32DU413." The location of this outcrop was rediscovered in 1995 and is shown on Figure 2.

In August, 1983, Corps of Engineers archeologists undertook an inventory and shovel testing project along the road into the Little Missouri Public Use Area. A total of 29 shovel tests were dug along either side of the road where it passed the previously defined boundaries of 32DU413. All of the shovel tests were sterile of cultural material. It was decided that instead of upgrading the existing road, a new road would be built 50 to 150 meters to the east. Gnabasik conducted an intensive inventory along the new right of way in October, 1983. Gnabasik (1983:2) noted that "The only cultural materials observed during the 3 August 1983 survey . . . were those hauled in with the road gravel, which of course would not be related to site 32DU413." No cultural material was found that could be attributed to site 32DU413. This part of the site area (if, in fact, cultural materials ever existed here) has now been destroyed by the road construction.

METHODS

Fieldwork was conducted at the Little Missouri Use Area between April 24 and April 29, 1995. Personnel for the project were Ross G. Hilman, Thomas K. Larson (principal investigator), Peter J. Lund, Cynthia J. Oliver, and John C. Sharpe.

The entire area within and around the original boundaries of 32DU413 was examined on foot with field personnel spaced no further than 10 m apart. The surface inspection revealed several low density concentrations of artifacts on the beach, as well as a few isolated artifacts on the uneroded surface south of the cutbank (see Figure 2). No

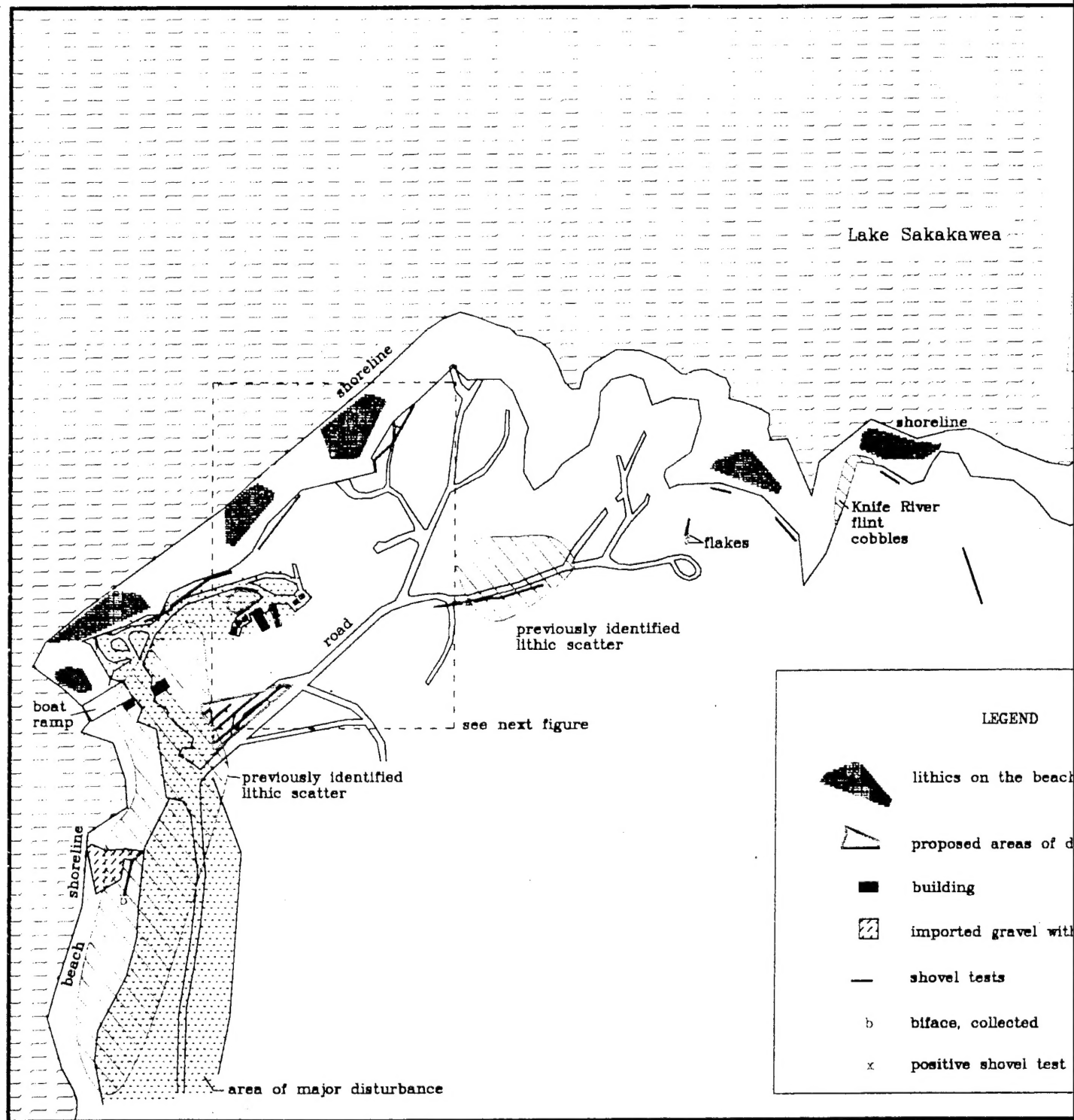
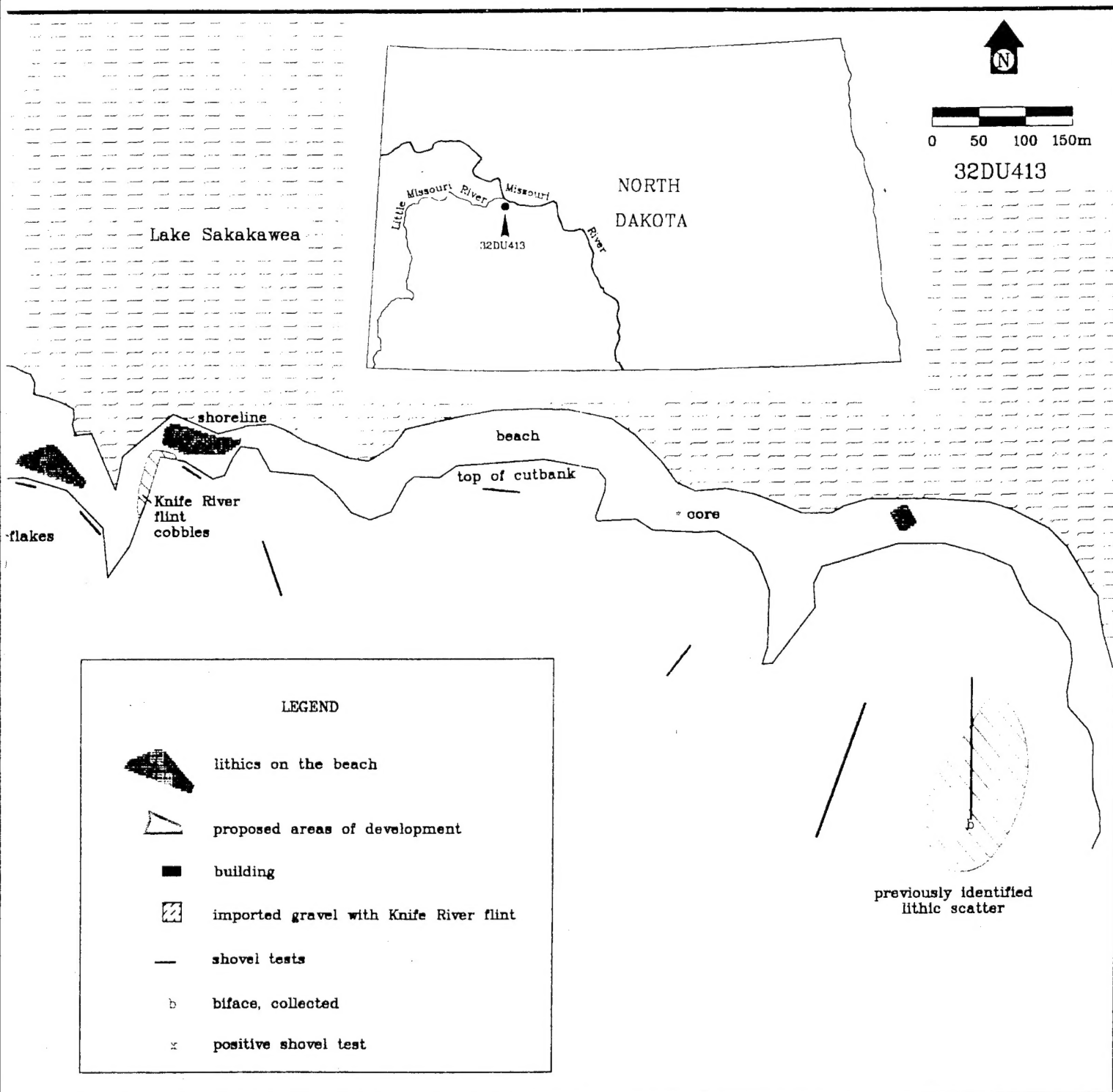


Figure 2. Site map of 32DU413.



cultural material was observed in the cutbank exposures. During this stage of the investigations, isolated artifacts and the boundaries of artifact concentrations were flagged for later mapping.

A total of 127 shovel tests were excavated in an attempt to define the site boundaries and establish areas of possible intact subsurface deposits. All shovel tests were excavated along straight line transects with individual test locations at 10 meter intervals. At all locations where artifact concentrations were noted on the beach, a shovel test transect was excavated approximately parallel to the concentration, on uneroded ground behind the cutbank. Rows of shovel tests were also excavated on all major ridge tops within the originally defined site boundaries. Additional shovel test transects were placed within two areas of anticipated development at Andrus Resort. All shovel tests were 30 to 35 cm in diameter. Depending on the nature of the matrix encountered, the depth of excavation varied from 30 to 90 cm in depth. All matrix from the shovel tests was screened through one-quarter inch mesh.

Upon completion of the surface inventory, a site map showing the locations of surface artifacts and topographical features was completed using an electronic total station and data gathered with a global positioning system receiver. The locations of the shovel tests and test units were added to the map as they were completed. Original site boundaries have been superimposed based on a site map compiled by Leaf (1976) and additional data supplied in Harris (1980) and Gnabasik (1983).

Six 1-by-1 meter test units were excavated (Figure 3). Test Units 1 and 6 were laid out on top of a ridge where a concentration of 23 flakes had been found in a vehicle trail. Test Unit 1 was placed immediately to the east of this concentration, while Test Unit 6 was excavated three meters east and one meter south of Test Unit 1. Test Unit 2 was placed near a lightly graveled road in a small valley containing deep alluvium. Test Unit 2 was excavated to determine the origin of several pieces of Knife River flint found on the surface and to sample the alluvium in the valley. Test Units 3 and 4 were placed within the southernmost of two areas of proposed development. Test Unit 5 was excavated at the location proposed for an outdoor toilet.

All of the test units were excavated in arbitrary 10 cm levels using standard hand excavation tools. All test units were excavated to at least 10 cm below the last encountered cultural materials and into sterile sands, clays, and gravels. An LTA Excavation Record Form was completed for each 1-by-1 meter unit. A profile of at least one wall of each test unit was drawn. Photographs were taken of all profiles, completed units, and the excavated feature.

With the exception of a waterscreen sample, all matrix was screened through one-quarter inch hardware cloth. A one liter waterscreen sample was collected from each level of each 1-by-1 meter unit and processed through one-sixteenth inch mesh.

An accession number for the assemblage from 32DU413 has been requested from the State Historical Society of North Dakota by the Corps of Engineers, Omaha District (letter from Richard P. Miner, Chief, Economics and Social Analysis Branch, Planning Division to Leonard Thorson, State Historical Society of North Dakota, dated May 9, 1995). When this accession number is received, the assemblage will be appropriately labeled and submitted to the State Historical Society for curation.

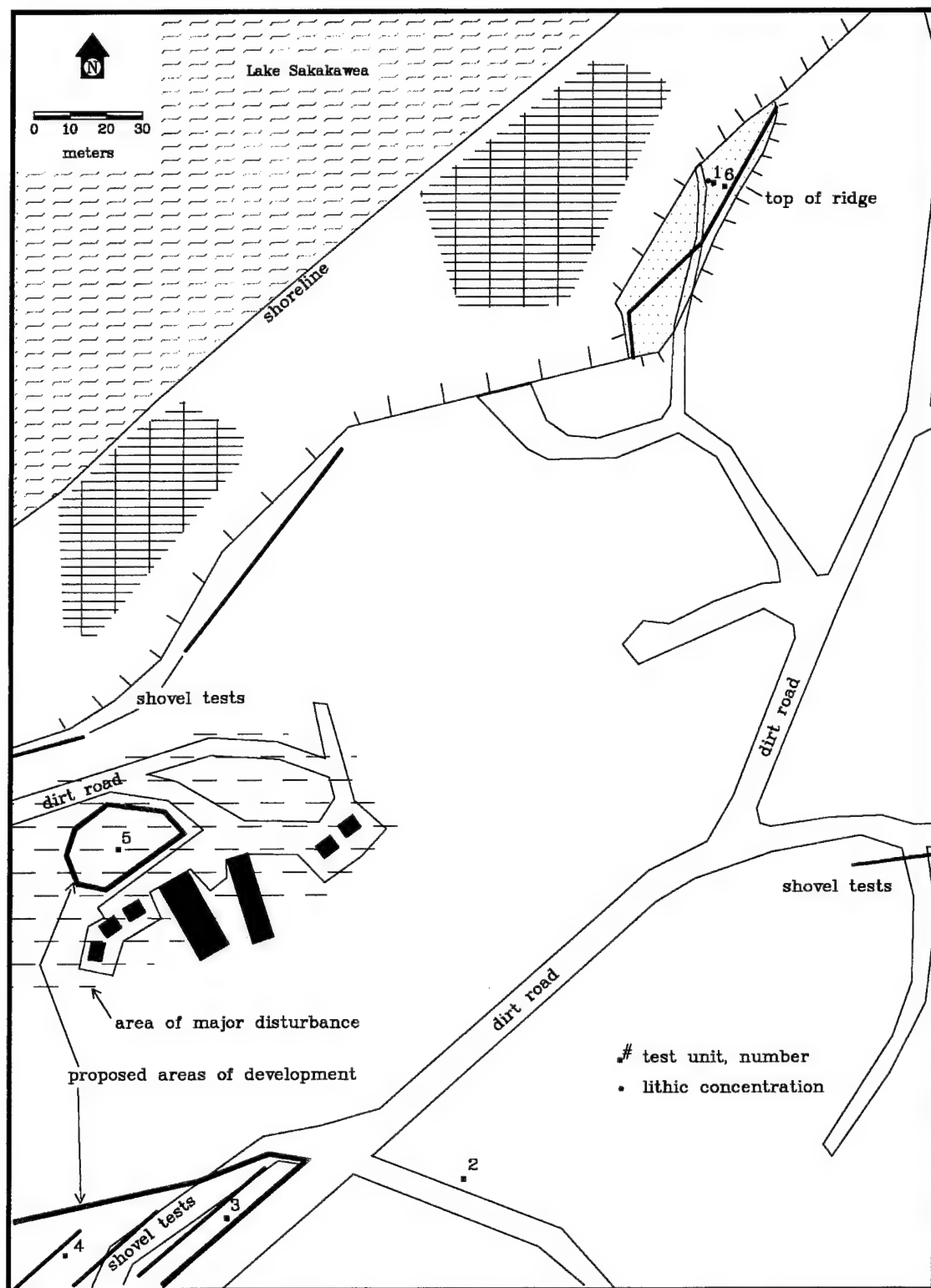


Figure 3. Expanded view of the northwestern part of 32DU413 showing the locations of the test units.

RESULTS

Surface Materials

Cultural materials found on the surface in the western portion of the site consist of an isolated biface, four areas containing artifacts on the beach and a concentration of flakes on a ridge top. The biface (Figure 4a) was found just above the high water line at the foot of a slope. Shovel testing on a small bench above the biface indicates that the slope consists of slump from landslides.

Of the four western artifact concentrations, the southwestern most is the only area with Holocene deposition under the artifacts. In this area, thirteen flakes and two cores of Knife River flint were found in a 15 m diameter area. The artifacts are on a thin, discontinuous remnant of Holocene deposition corresponding in extent to the distribution of cultural materials. Given the limited and discontinuous extent of deposition, significant cultural deposits in this area are unlikely. The other three areas contain diffuse distributions of between 10 to 24 flakes in strand lines resting on bedrock. The flakes are predominately Knife River flint, but a few were produced from porcellanite and Tongue River silicified sediment.

A small but dense concentration of flakes was found on a high, narrow ridge top overlooking the reservoir. The lithic concentration consisted of 23 flakes in a one meter wide area exposed in an eroded vehicle trail. The position of the flakes in the trail strongly indicated the presence of subsurface cultural deposits in this area (resulting in the placement of Test Units 1 and 6). The north edge of this ridge is slumping into the reservoir and some of the artifacts on the beach probably originated on the ridge top.

In the central portion of the site, three flakes were found on a ridge top in a vehicle trail. This area contains less than 10 cm of deposition and significant subsurface cultural deposits are unlikely.

Two areas with artifacts were found on the beach in the central part of the site. The westernmost of these contains a very diffuse scatter of approximately two dozen flakes, while the one to the east contains an estimated ten to fifteen flakes and a flake tool. The tool is Knife River flint with fine, unifacial retouch along one margin (not collected). Nearly all of the flakes in both areas are Knife River flint. A few porcellanite flakes are also present.

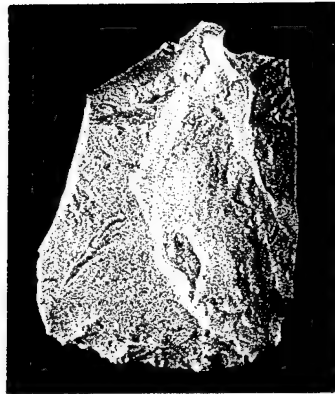
In the eastern portion of the site an isolated core was found on the beach as was a small scatter containing three Knife River flint flakes and a quartzite core. A few flakes and a Knife River flint biface (Figure 4b) produced from Knife River flint were found on a ridge top near the eastern edge of the originally defined site boundaries.

Shovel Tests

Of the 127 shovel tests conducted throughout the site, only two produced results: shovel test number 19 contained large mammal bone, and shovel test number 48 contained one Knife River flint flake. The latter of these two shovel tests was dug in an area of major disturbance that was the result of earlier campground developments.

Test Units

As noted above, Test Units 1 and 6 were placed on a ridge top that contained a concentration of surface lithics. Within Test Unit 1, six flakes of Knife River flint, one of



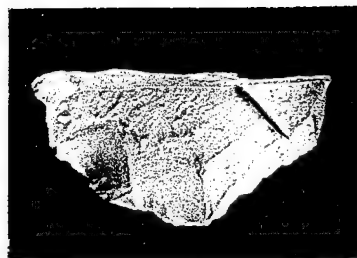
a



b



c



d

0 1 2 3 cm

Figure 4. Chipped stone tools collected from 32DU413.

which was from the waterscreen sample, and a small amount of charcoal were recorded in the upper 10 cm. A small edge fragment from a biface and a Knife River flint flake tool (Figure 4c) with use wear along one margin was also found in this level. Twenty-three flakes of Knife River flint (one from the waterscreen sample) were found in the 10 to 20 cm level. A flake was obtained from the matrix excavated from the 20 to 30 cm level. Test Unit 1 was excavated to a final depth of 40 cm and contained no further cultural material.

The profile for Test Unit 1 is shown in Figure 5a. The upper stratigraphic layer is a loess deposit approximately 20 to 25 cm thick. The upper 10 cm of the loess is a dark brown silty loam followed by a brown silty loam. The remainder of the unit (from 25 to 50 cm) was excavated into the unconsolidated silty clay bedrock.

There is a shallow depression, measuring 130 cm in diameter by 25 cm in depth, approximately one meter west of Test Unit 1. A shovel test, 30 cm in diameter, was dug to a depth of 60 cm in the center of the depression in order to determine its contents. Bottle glass fragments, beer and soda cans, aluminum foil, and wood ash were found in the top 30 cm of the shovel test. The depression appears to be the remains of an campground fire hearth constructed sometime since the establishment of the public use area.

In order to determine if the subsurface cultural material extended beyond the surface concentration and Test Unit 1, a second test unit (6) was excavated on the ridge top. Test Unit 6 was excavated to a final depth of 40 cm. A bifacial tool fragment (Figure 4d) of Knife River flint, with cortex on one surface as well as evidence of coarse flaking, was found in the 10 to 20 cm level. Nine Knife River flint flakes were also recovered from the 10 to 20 cm level and one Knife River flint flake was found in the waterscreen sample taken from the 20 to 30 cm level. Figure 5b shows the profile for Test Unit 6. Deposition is a loess consisting of a dark brown silty loam in the upper 15 cm followed by a dark brown clay loam extending to unconsolidated bedrock at 22 cm.

Test Unit 2 was placed near a lightly graveled road in a small valley containing deep alluvium. The profile of Test Unit 2 is shown in Figure 6. The upper 12 cm is dark brown clay loam and is the modern A horizon. The next 6 to 10 cm are a yellow-brown clay loam. From approximately 20 to 30 cm, there is a buried A horizon that is a dark grayish-brown color. A band of yellowish-brown silty loam lies below this and extends to a depth of 40 to 45 cm. The deepest layer exposed in Test Unit 2 is a dark grayish-brown clay loam A horizon. The full 50 cm of the unit are alluvial deposits. Test Unit 2 contained no cultural material.

Test Units 3 and 4 were placed within an area of planned campground expansion and development. Test Unit 3 was excavated to 50 cm, in which no cultural material was evident. The top 7 cm of this unit (Figure 7a) was a dark grayish-brown silty loam that appears disturbed by brush clearing. It is somewhat mottled and contains decayed tree roots and branches. There is a redeposited charcoal stain in the north half of the profile at approximately 5 cm that appears to be the result of blading or dumping of recently burned brush and tree branches. Below this is a grayish-brown alluvial deposit. The bottom 10 to 15 cm of Test Unit 3 is a yellowish-brown clay loam, also an alluvial deposit.

Test Unit 4 was excavated to 40 cm. One piece of Knife River was found in the waterscreen sample from the top 10 cm of Test Unit 4. This level also contained a large amount of sand and gravel used on nearby tent pads and roads. The Knife River flint was probably imported with the gravel. The northeast corner of Test Unit 4 was shovel tested to a total depth of 80 cm but failed to produce any cultural material. The upper 5 cm of

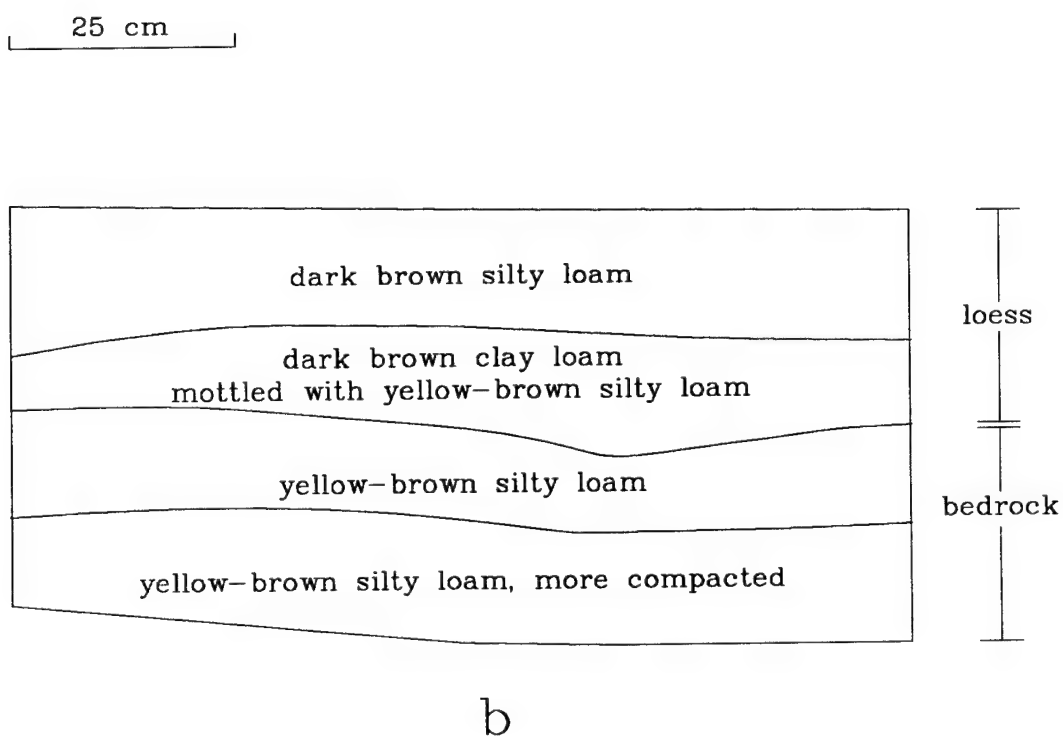
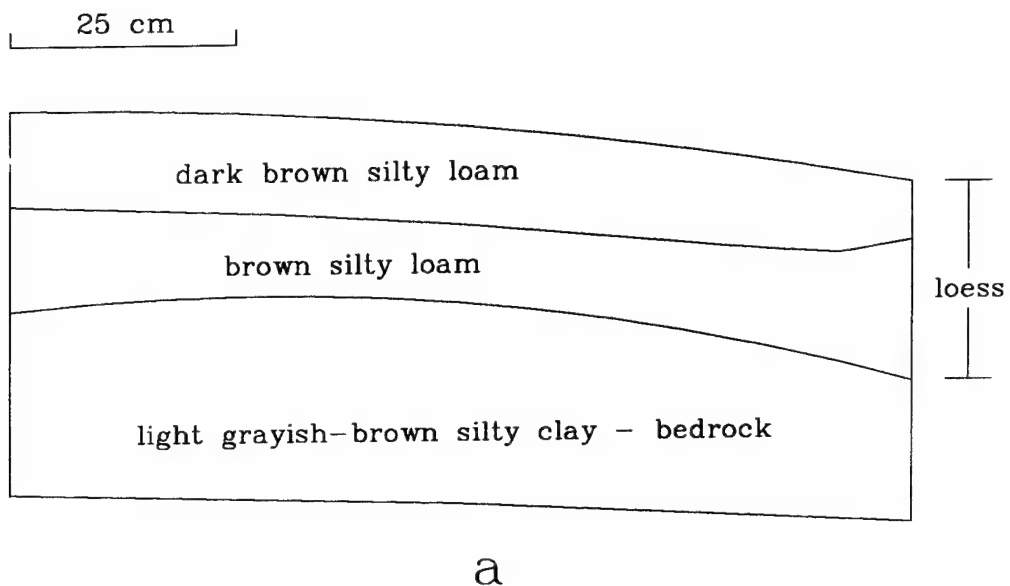


Figure 5. West wall profiles of Test Unit 1 (a) and Test Unit 6 (b).

25 cm

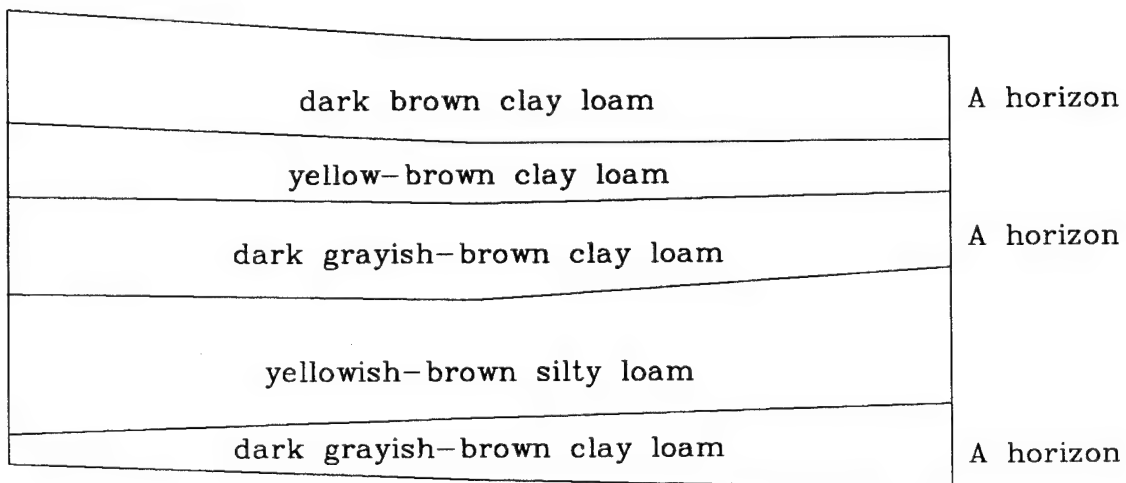
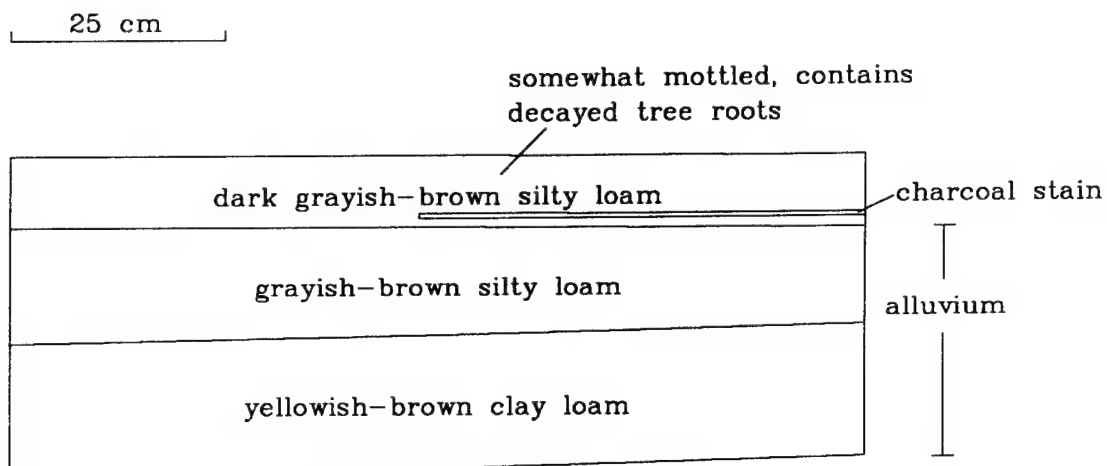
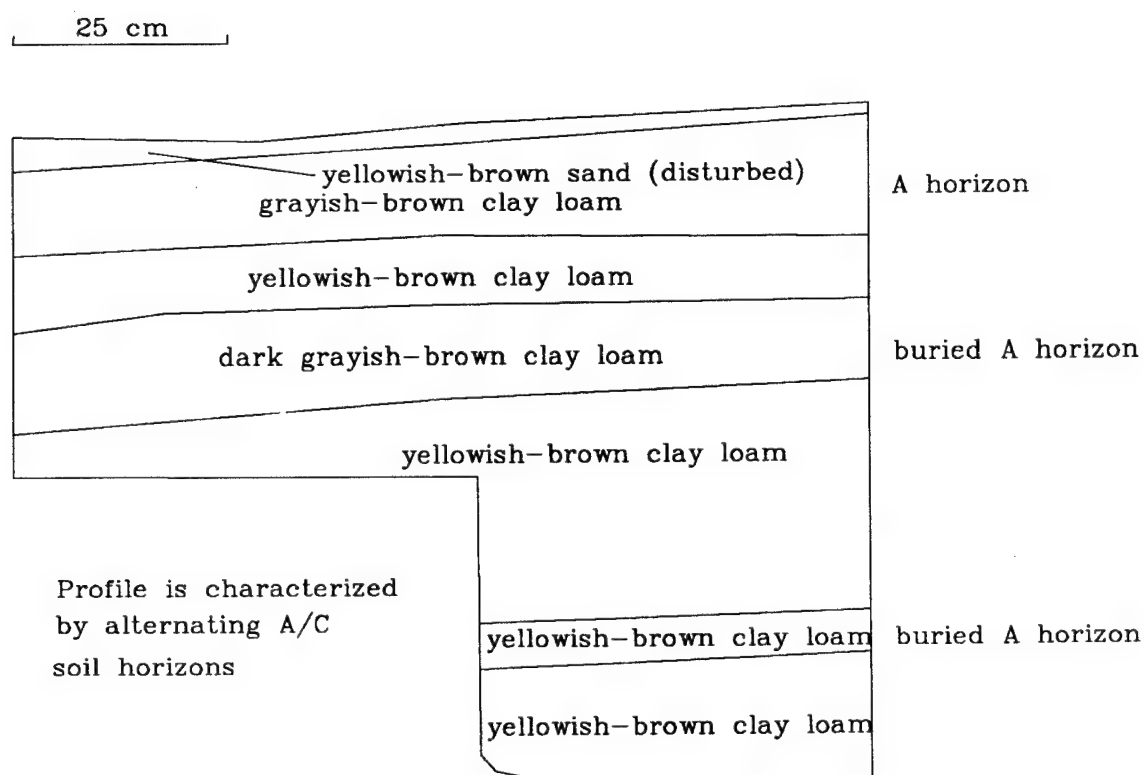


Figure 6. West wall profile of Test Unit 2.



a



b

Figure 7. West wall profiles of Test Unit 3 (a) and Test Unit 4 (b).

Test Unit 4 is yellowish-brown sand with gravel (Figure 7b). The remaining soil alluvium with a profile characterized by alternating A and C horizons.

Test Unit 5, at the location for a proposed outdoor toilet, contained two Knife River flint flakes, one in the excavation level from 0 to 10 cm and another from 10 to 20 cm. Within Test Unit 5, 25 cm of disturbed brown sandy loam, which becomes lighter with depth, sits directly on bedrock (Figure 8). This upper material appears to have been brought into this part of the recreation area as landscaping fill. Both flakes were found in this disturbed matrix.

CONCLUSIONS AND RECOMMENDATIONS

Figure 9 illustrates the redefined boundaries of 32DU413 based on the findings from 1995. While three areas of cultural material are still identified, they bear only a slight resemblance to the originally defined site areas (compare with Figure 2). The redefined boundaries equate to approximately 103,000 m² of site area.

Since the original recording by Leaf, three Corps of Engineers inspections of 32DU413 have revealed little in the way of cultural material at this site. The 1995 LTA study generally confirms these findings. Except for displaced materials on the beach, only a few areas were identified that appear contained culturally modified lithics not introduced by gravel operations. There is a fair amount of Knife River flint in the portions of the site behind the cutbank, but the majority of this materials appears to be unmodified, coming either from nearby outcrops or introduced into the site along with other gravels.

Artifacts recorded on the beach line of Lake Sakakawea appear to be out of place and resting on exposed bedrock. The height of the cutbanks above the beach area indicate that these artifacts have been vertically displaced from 5 to 20 meters. The paucity of tools also tends to indicate that the beach has been heavily collected.

Of the six one-by-one meter test units excavated in the western part of 32DU413, only two produced results that tend to indicate undisturbed subsurface cultural materials. Test Units 1 and 6, on top of an isolated ridge top, revealed a cultural level containing chipped stone tools and debitage. The level appears to be clustered at approximately 10 cm below the present ground surface. While some lithics are present on the surface of the ridge, these appear to be the result of exposure by a vehicle trail. While shovel testing was probably not intense enough to reveal the total extent of this cultural level across the ridge top, the distribution of artifacts on the beach below it tends to suggest that all of the remaining ridge (ca. 15 m wide by 80 m long) probably contains buried cultural material. The changes in density between Test Unit 1 and Test Unit 6 probably indicate the artifactual material may cluster in pockets that may be indicative of activity areas.

It is believed that the testing results for Test Units 1 and 6, the exposure of lithics in the vehicle trail, and the amount of cultural debris on the beach immediately below it, indicate that this ridge top at 32DU413 (see the area indicated on Figures 3 and 9) contains in situ cultural materials that, through additional investigations, could contribute to our understanding of the prehistoric settlement and use of this part of the Little Missouri Study Unit. The materials on the ridge top are therefore believed to be eligible for nomination to the National Register of Historic Place under Criterion D. However, without additional study beyond the scope of the present purchase order, the identification of research topics most appropriate for this part of 32DU413 is not possible. Should funding for further work at 32DU413 become available, a phased data recovery plan is recommended, with the first phase being the excavation of additional

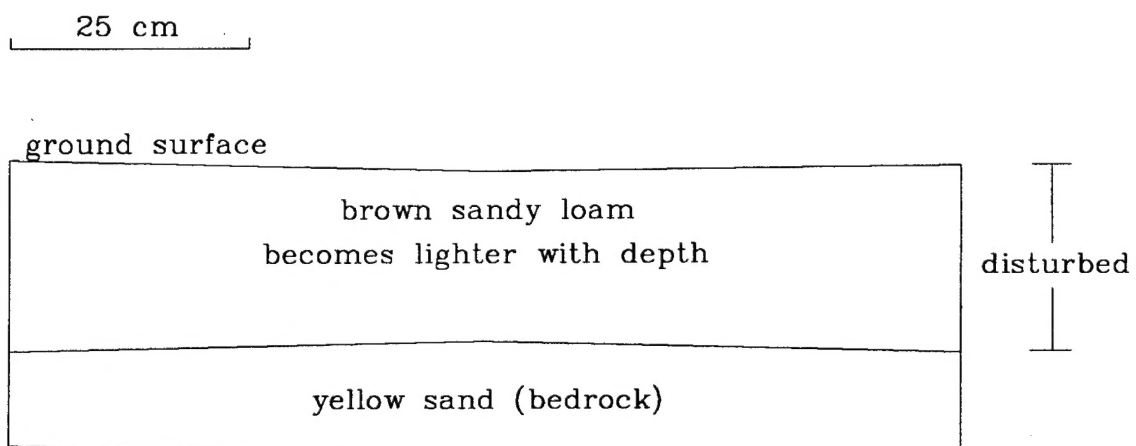


Figure 8. West wall profile of Test Unit 5.

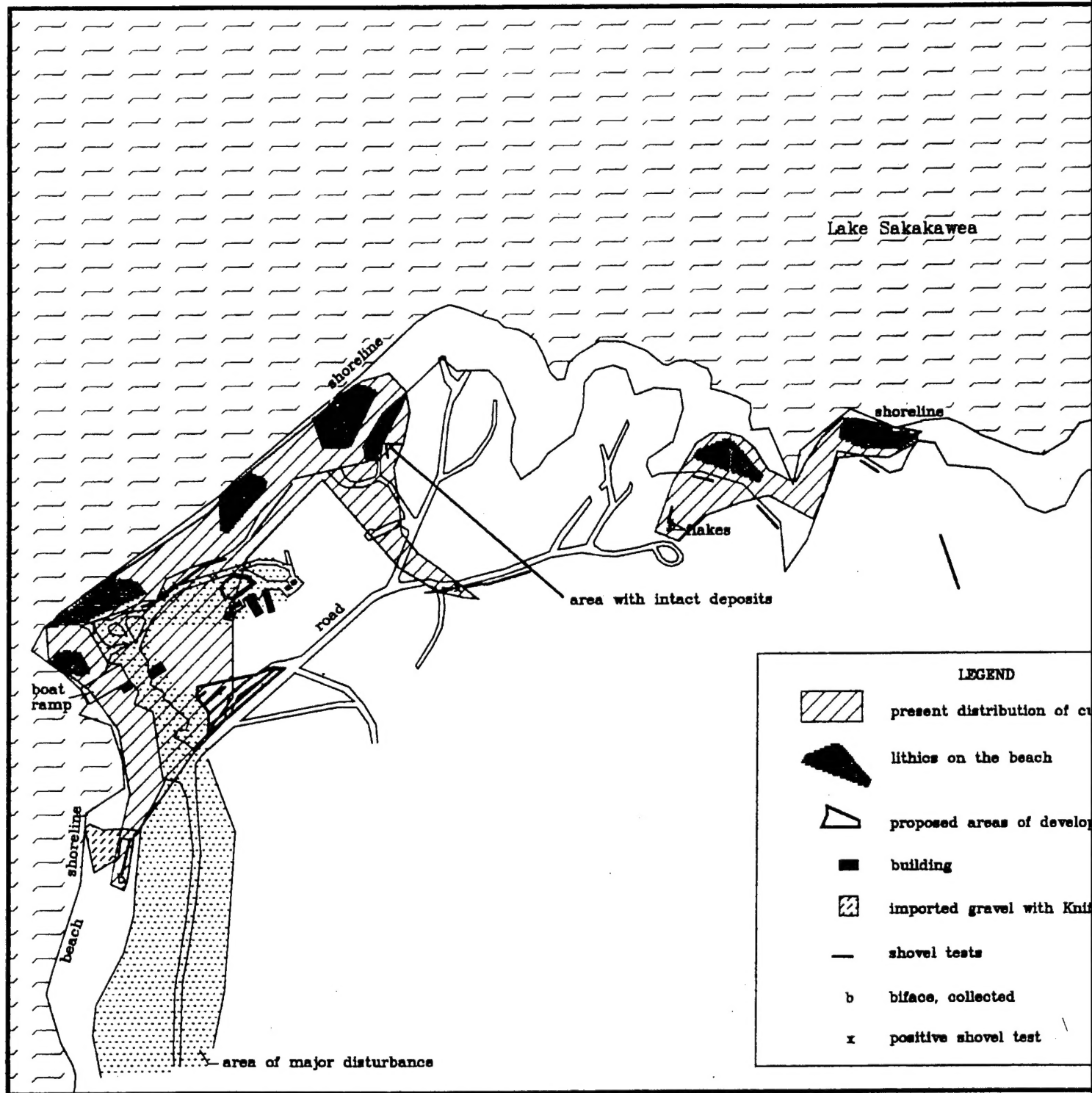
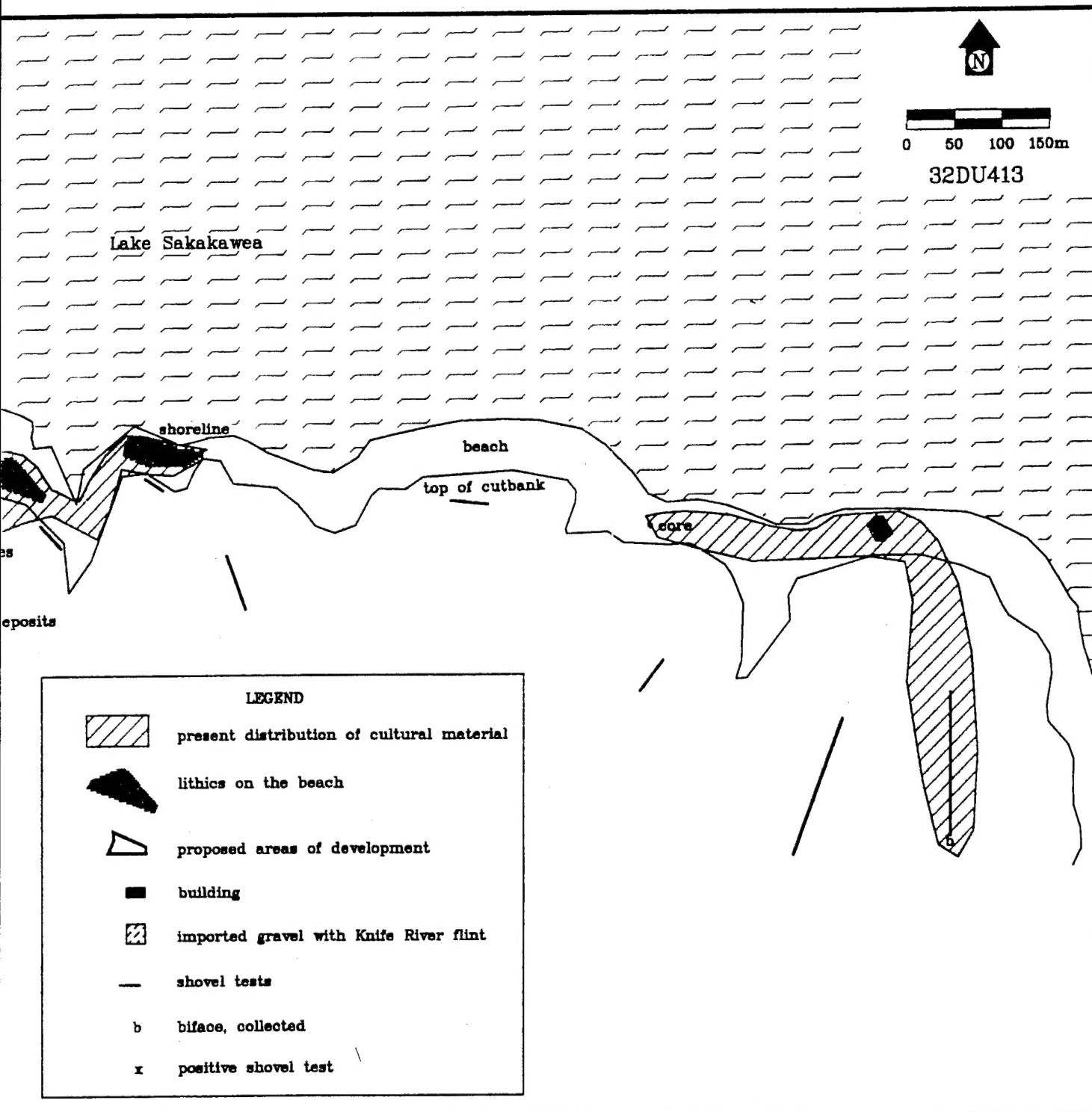


Figure 9. Map of 32DU413 showing redefined site limits and the area with intact cultural deposits.



tact cultural deposits.

shovel tests on a two meter grid system. This should be followed by the excavation of another ten 1-by-1 meter test units on the ridge top. From this work, it should be possible to gather better data concerning areas of artifact concentration and patterning in the artifact assemblage. If datable features are present on the ridge top, this increase in the intensity of sampling should detect them.

During the 1995 investigations, a number of large soil cracks were noted on this ridge top running parallel to the cutbank. Below the cutbank, there is also a considerable area of fresh slump that appears to have been displaced in the last year. It is suspected that weather conditions in the last few years, especially drying of the matrix followed by short periods of water saturation, have greatly accelerated the development of soil cracks and the resultant slumping. For this reason, the additional investigations recommended at 32DU413 should be carried out as soon as possible.

No other areas were found at 32DU413 that show evidence of in situ cultural material. Surface evidence and shovel test results indicate a high degree of erosion and surface exposure, with much of the area having only a few centimeters of deposition over bedrock. The only exceptions to this are the small draws containing fairly deep alluvial and colluvial deposition. These draws contain relatively coarse sediment, however, and no indications of prehistoric occupation or use. With the exception of the ridge top discussed above, the other four test units (2 through 5) recovered only a very low density of cultural material, all of it apparently from disturbed contexts. Except for the ridge top, the material at 32DU413 does not appear to be eligible for nomination to the National Register of Historic Places. This includes all of the areas within Andrus Resort that are scheduled for development. For this reason, archeological clearance for these developments is recommended without additional cultural resource stipulations.

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